

# XU GU

## Experience

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### Tiktok

07/2022 – 07/2023

Software Engineer | Java, MySQL, Mockito, JUnit, RocketMQ, Kafka, Redis, CI, Docker

Beijing, China

- Spearheaded the development test group in developing the integration test framework using TestNG and **Spring Boot**.
- Enhanced testing efficiency and stability, providing support for **80+** developers and integrating **10k+** test cases.
- Optimized the Continuous Integration (CI) process in Gitlab Pipelines, streamlining the execution of 30k+ test cases.
- Enhanced **RPC** interactions for **Redis** and **RocketMQ** by simulating operations in local memory and harmonizing data exchanges through **JSON** formatting, streamlining efficiency and standardization.
- Achieved the system success rate over **98%**, and reduced execution time from 40 minutes to under 25 minutes.
- Implemented an advanced offline data comparison **API**, leveraging **multi-threaded asynchronous** operations and **Java thread pools** to automate the identification of discrepancies between HiveSQL results and Crux responses.

### Tiktok

05/2021 – 09/2021

Software Engineer Intern | Python, Flask, Thrift, MySQL, Vue, TypeScript

Shanghai, China

- Developed and integrated the TikTok advertisement monitoring system using **Python**, scanning **400k+** ads to identify unauthorized displays and directly uncovering and solving 3 significant issues, substantially mitigating platform risks.
- Integrated the ad monitoring system into the operational platform, enhancing data analysis and operational efficiency, providing support for 60+ engineers, and reducing the time spent on manual ad discrepancy handling by **30%**.
- Implemented a monitoring RPC service using **Thrift** to automatically check and report invalid advertisements on the TikTok platform, streamlining the process through the message queue.
- Visualized the monitoring results and advertisement audit processes, and developed interactive features for each advertisement using **Vue.js** and **TypeScript**.

## Projects

**Zesty: A recipe website** | Python, flask, MySQL, AWS, Nginx, uWSGI, Gemini, React.js, TypeScript, Bootstrap

- Led a team of 7 in developing **Zesty**, a dynamic recipe website, overseeing project milestones, conducting code reviews, and fostering technical growth among team members.
- Implemented **Gemini** API for AI-assisted recipe generation and ingredient input, enabling personalized recipe recommendations based on users' existing ingredients, enhancing user engagement and satisfaction.
- Designed a scalable backend using Flask and MySQL, deployed on AWS EC2 with Nginx and uWSGI. Developed features for organizing pantries and engaging with the community through comments and ratings.

**Scheduling System of a Chemical Experiment Robot** | Java, Spring Boot, Camunda, ZeroMQ, MySQL

- Engineered an autonomous scheduling system for chemical experiment robots using Java, Spring Boot, and Camunda, enhancing laboratory operations by enabling experiments to proceed without human intervention. Managed equipment instructions and data storage with ZeroMQ and MySQL.
- The system's efficacy was highlighted by a 22% increase in experiment accuracy compared to human operators, leading to the publication of a research [paper](#) that has been cited by multiple peers in the field.

**MovieINTPN: A Command Line Tool for Adding Subtitles to Videos** | Python, ffmpeg, autosub, Machine Learning

- Developed a CLI using **Python** to extract subtitles of videos and add the subtitle text to the original video with user-defined language **MovieINTPN** independently.
- Extracted subtitles using an open-source tool (**autosub**) and translate the subtitle using Google Translate API, then converted video formatting and added the subtitle to the video using **ffmpeg**.
- Applied to **100+** videos with considerably high accuracy of subtitles recognition and translation, enhancing the accessibility of video content for non-native speakers.

## Education

**San Francisco State University**

08/2023 – 05/2025(Expected)

MS. in Computer Science, GPA: 3.9/4.0

San Francisco, CA

**Nanjing University**

09/2019 – 06/2022

MEng. in Chemical Engineering

Nanjing, China

**Nanjing Normal University**

09/2015 – 06/2019

BEng. in Applied Chemistry

Nanjing, China

**Courses:** Software Engineering, Internet Application Design and Development, Advanced Computer Network, Deep Learning, Data Structures & Algorithms, Computer Networks, Operating System

## Skills

**Languages:** Java, Python, C++, JavaScript/Typescript, HTML/CSS, SQL

**Framework:** Flask, Spring Boot, Apache Thrift, React.js, Node.js, Express.js, Bootstrap, PaddlePaddle, TensorFlow

**Technologies:** MySQL, PostgreSQL, Redis, Kafka, ZeroMQ, MongoDB, Docker, AWS, Nginx, Uwsgi, ffmpeg, Linux